

Applicants : Michael Wayne Graham and Robert Norman Rice
Serial No. : 10/759,841
Filed : January 15, 2004
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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-171. (Canceled)

172. (Currently Amended) A double-stranded DNA construct comprising:

a first structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in a mammalian cell;

a second structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;

a stuffer fragment which consists of nucleotides other than the nucleotides of the repeating sequence, and which separates and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA construct is only about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

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173-175. (Canceled)

176. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the region of the target gene is in an exon.

177. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from a lentivirus.

178. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from an immunodeficiency virus.

179. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from a single-stranded (+) RNA virus.

180. (Canceled)

181. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.

182. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.

183. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.

184. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the total length of the double-stranded DNA construct is no more than 0.5-2.0 kilobases.

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185. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the double-stranded DNA construct is in a virus particle.
186. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the double-stranded DNA construct is in a liposome.
187. (Canceled)
188. (Currently Amended) A mammalian cell having a DNA comprising:
- a first structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in the mammalian cell;
 - a second structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA;
 - a stuffer fragment which consists of nucleotides other than the nucleotides of the repeating sequence, and which is between and links the first and second structural gene sequences;
 - a promoter operable in the mammalian cell; and
 - a transcription termination sequence active in the mammalian cell,
- wherein the repeating sequence within the DNA is only about 20 nucleotides in length, and

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wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

189. (Canceled)

190. (Previously Presented) The mammalian cell of claim 188, wherein the region of the target gene is in an exon.

191. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from a lentivirus.

192. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from an immunodeficiency virus.

193. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from a single-stranded (+) RNA virus.

194. (Canceled)

195. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.

196. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.

197. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.

198. (Canceled)

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199. (Previously Presented) The mammalian cell of claim 188, wherein the DNA is integrated into the genome of the mammalian cell.
200. (Currently Amended) An isolated mammalian cell, tissue or organ, having a DNA comprising:

a first structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in the mammalian cell;

a second structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA;

a stuffer fragment which consists of nucleotides other than the nucleotides of the repeating sequence, and which is between and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA is only about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

201. (Canceled)

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202. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the region of the target gene is in an exon.
203. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from a lentivirus.
204. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from an immunodeficiency virus.
205. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from a single-stranded (+) RNA virus.
206. (Canceled)
207. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.
208. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
209. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
210. (Canceled)

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211. (Previously Presented) The isolated mammalian cell, tissue
or organ of claim 200, wherein the DNA is integrated into
the genome of the isolated mammalian cell, tissue or organ.

212-244. (Canceled)